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SAWYER LAW GROUP LLP
P.O. BOX 51418
PALO ALTO, CA 94303

EXAMINER
RADTKE, MARK A

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Application Number: 10/648,499
Filing Date: August 25, 2003
Appellant(s): LINDEN, ROBBERT C. VAN DER

Erin C. Ming
<u>For Appellant</u>

EXAMINER'S ANSWER

This is in response to the appeal brief filed 16 April 2007 appealing from the Office

action mailed 19 September 2006.

(1) Real Part in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

E. Damiani, S. De Capitani di Vimercati, S. Paraboschi, P. Samarati, "Design and implementation of an access control processor for XML documents". Computer Networks 33 (2000) pp. 59-75. Published June 2000.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2.   Claims 1-31 are rejected under 35 U.S.C. 102(b) as being anticipated by <u>Damiani</u> <u>et al.</u> ("Design and implementation of an access control processor for XML documents", Published in "Computer Networks", Vol. 33, Issues 1-6, Pages 59-75. Available online at at http://www.sciencedirect.com/science?_ob=MImg&_imagekey=B6VRG-40B2JGR-7-Y&_cdi=6234&_user=2502287&_orig=browse&_coverDate=06%2F30%2F2000&_sk=9

99669998&view=c&wchp=dGLbVlb-

zSkzk&md5=ccc8253d4443baa1b88aed3a8262a7b9&ie=/sdarticle.pdf).

As to claim 1, <u>Damiani et al.</u> teaches a method for performing path-level access

control evaluation for a structured document, wherein the structured document

comprises a plurality of nodes and each of the plurality of nodes is described by a path

(see page 63, section 3.1, "Identifying authorization objects via path expressions"), the

method comprising the steps of:

a) storing an access control statement in a cache entry (see page 68, section

5.3, "Performance and caching") for a path associated with a node of the plurality of

nodes (see page 65, section 3.1, "Identifying authorization objects via path

expressions");

b) receiving a query, wherein the query comprises a request to access the node

(see page 67, section 5, "Design and implementation guidelines", paragraph 2, lines 6-

9);

c) checking the cache entry for the path associated with the node (see page 66,

section 4, "Authorization enforcement", lines 10-13 and page 68, section 5.3,

"Performance and caching", lines 11-12); and

d) granting or denying access to the node based on the access control statement

in the cache entry for the path associated with the node (see page 66, section 4,

"Authorization enforcement", lines 1-5).

As to claims 2, 12 and 28, <u>Damiani et al.</u> teaches wherein the access control statement is one of a grant statement (see page 66, section 4, "Authorization enforcement", line 32, "'+' (permission)"), a deny statement ("'-' (denial)"), an unknown statement (line 33, "'ε' (no authorization)") and a data-dependent statement (see page 63, section 3, "Authorizations", bullet-point 1, where "data-dependent statement" is read on "specific documents").

As to claims 3 and 13, <u>Damiani et al.</u> teaches wherein step (d) further comprises:

(d1) granting access to the node responsive to the access control statement being a grant statement (see page 66, section 4, "Authorization enforcement", lines 1-5).

As to claims 4 and 14, <u>Damiani et al.</u> teaches wherein step (d) further comprises:

(d1) denying access to the node responsive to the access control statement being a deny statement (see page 66, section 4, "Authorization enforcement", lines 1-5).

As to claims 5 and 15, <u>Damiani et al.</u> teaches wherein step (d) further comprises:

(d1) evaluating an access control policy affecting the path in response to the access control statement being an unknown statement (see page 68, section 5.3, "Performance and caching", line 1 – page 69, line 5);

(d2) granting access responsive to a result of the evaluation granting access (see page 66, section 4, "Authorization enforcement", lines 1-5); and

(d3) denying access responsive to the result of the evaluation denying access

(see page 66, section 4, "Authorization enforcement", lines 1-5).

As to claims 6 and 16, <u>Damiani et al.</u> teaches further comprising:

(e) determining whether the access control policy affecting the path is data-dependent (see page 63, section 3, "Authorizations", bullet-point 1, where "data-dependent" is read on "instance");

(f) changing the access control statement in the cache entry from the unknown statement to a grant statement or a deny statement based on the evaluation in response to the access control policy being data-independent (see page 68, section 5.3, "Performance and caching", line 1 – page 69, line 5); and

(g) changing the access control statement in the cache entry from the unknown statement to a data-dependent statement in response to the access control policy being data-dependent (see page 68, section 5.3, "Performance and caching", line 1 – page 69, line 5).

As to claims 7 and 17, <u>Damiani et al.</u> teaches wherein step (d) further comprises:

(d1) evaluating an access control policy affecting the path in response to the access control statement being a data-dependent statement (see page 63, section 3, "Authorizations", bullet-point 1, where "data-dependent" is read on "instance");

(d2) granting access responsive to a result of the evaluation granting access (see page 66, section 4, "Authorization enforcement", lines 1-5); and

(d3) denying access responsive to the result of the evaluation denying access

(see page 66, section 4, "Authorization enforcement", lines 1-5).

As to claims 8 and 18, Damiani et al. teaches further comprising:

(e) repeating steps (c) and (d) for a next node in the plurality of nodes (See page

69, lines 2-5, section 5.3, "Performance and caching". The entire document is

transformed, so each node must be transformed).

As to claims 9 and 19, Damiani et al. teaches wherein evaluating step (d1)

further comprises:

(d1i) evaluating a value expression for the path associated with the node,

wherein the value expression is an executable statement based on the access control

policy affecting the path and indicates who has access to the node (see page 70,

section 6.1, "The role of encryption").

As to claims 10 and 20, Damiani et al. teaches wherein steps (c) and (d) are

performed during run-time (See page 68, section 5.2, "Execution phases", column 2,

final paragraph. It is implied that the execution steps take place on-demand; that is, at

run-time.).

As to claim 11, Damiani et al. teaches a computer readable medium containing a

computer program for performing path-level access control evaluation for a structured

document, wherein the structured document comprises a plurality of nodes and each of the plurality of nodes is described by a path (see page 63, section 3.1, "Identifying authorization objects via path expressions"), the computer program comprising programming instructions for:

For the remaining steps of this claim applicant(s) is/are directed to the remarks and discussions made in claim 1 above.

As to claim 21, <u>Damiani et al.</u> teaches method for performing path-level access control evaluation for a structured document, wherein the structured document comprises a plurality of nodes and each of the plurality of nodes is described by a path (see page 63, section 3.1, "Identifying authorization objects via path expressions"), the method comprising the steps of:

a) storing an access control statement in a cache entry for a path associated with a node of the plurality of nodes (see Examiner's comments regarding claim 1), wherein the access control statement is one of a grant statement, a deny statement, an unknown statement and a data-dependent statement (see Examiner's comments regarding claim 2);

b) receiving a query, wherein the query comprises a request to access the node (see Examiner's comments regarding claim 1);

c) checking the cache entry for the path associated with the node (see Examiner's comments regarding claim 1);

d) granting access to the node responsive to the access control statement being a grant statement (see Examiner's comments regarding claim 3);

e) denying access to the node responsive to the access control statement being a deny statement (see Examiner's comments regarding claim 4); and

f) evaluating a value expression for the path associated with the node to produce a result in response to the access control statement being an unknown statement or a data-dependent statement (see Examiner's comments regarding claim 2),

wherein the value expression is an executable statement based on an access control policy affecting the path and indicates who has access to the node (see Examiner's comments regarding claim 1).

As to claims 22 and 25, <u>Damiani et al.</u> teaches further comprising:

g) granting or denying access to the node based on the result of the evaluation (see page 66, section 4, "Authorization enforcement", lines 1-5);

h) changing the access control statement in the cache entry from the unknown statement to a grant statement or a deny statement based on the result of the evaluation in response to the access control policy being data-dependent (see page 68, section 5.3, "Performance and caching", line 1 – page 69, line 5); and

i) changing the access control statement in the cache entry from the unknown statement to a data-dependent statement in response to the access control policy being data-dependent (see page 68, section 5.3, "Performance and caching", line 1 – page 69, line 5).

As to claims 23 and 26, <u>Damiani et al.</u> teaches further comprising: j) repeating steps (c) through (i) for a next node in the plurality of nodes (See page 69, lines 2-5, section 5.3, "Performance and caching". The entire document is transformed, so each node must be transformed).

As to claim 24, <u>Damiani et al.</u> teaches a computer readable medium containing a computer program for performing path-level access control evaluation for a structured document, wherein the structured document comprises a plurality of nodes and each of the plurality of nodes is described by a path (see page 63, section 3.1, "Identifying authorization objects via path expressions"), the computer program comprising programming instructions for:

For the remaining steps of this claim applicant(s) is/are directed to the remarks and discussions made in claim 21 above.

As to claim 27, <u>Damiani et al.</u> teaches a system for performing path-level access control evaluation for a structured document, wherein the structured document comprises a plurality of nodes and each of the plurality of nodes is described by a path (see page 63, section 3.1, "Identifying authorization objects via path expressions"), the system comprising:

For the remaining steps of this claim applicant(s) is/are directed to the remarks and discussions made in claim 21 above and see also Figure 1.

As to claim 29, <u>Damiani et al.</u> teaches further comprising:

an access control mechanism coupled to the database management system, the

access control mechanism being operable to determine access control to the node

responsive to the access control statement being an unknown statement (see

Examiner's comments regarding claim 5) or a data-dependent statement (see

Examiner's comments regarding claim 6).

As to claim 30, <u>Damiani et al.</u> teaches wherein the access control mechanism is

further operable to generate a value expression for the path associated with the node

based on an access control policy affecting the path, and wherein the database

management system is further operable to evaluate the value expression for the path to

determine whether to grant or deny access to the node (see Examiner's comments

regarding claim 9).

As to claim 31, <u>Damiani et al.</u> teaches wherein the database management

system is further operable to change the access control statement in the cache entry

from the unknown statement to a grant statement or a deny statement based on a result

of the evaluation of the value expression responsive to the value expression for the path

being data-independent and to change the access control statement in the cache entry

from the unknown statement to a data-dependent statement responsive to the value

expression for the path being data-dependent (see page 70, section 6.1, "The role of

encryption" and see page 68, section 5.3, "Performance and caching", line 1 – page 69,

line 5).

(10) Response to Argument

Appellant's arguments presented in the Appeal Brief filed on 16 April 2007 have

been fully considered but are not deemed persuasive.

The Appellant argues (A)(i) "Damiani does not disclose, teach, or suggest

'storing an access control statement in a cache entry for a path associated with a node

of the plurality of nodes'". The Examiner respectfully disagrees.

As indicated in the previous Office Actions, section 3.1 of <u>Damiani</u> is entitled

"Identifying authorization objects via path expressions". The section describes the

application of access control statements to paths associated with nodes. "Given a path

expression l1/l2/.../ln, a condition on label li restricts the application of the path

expressions only to those node(s) li for which the condition evaluates to be true." (See

page 65, left column, bottom of page) Furthermore, the last few lines of the right column

of page 61 describe "authorizations that apply to all documents matching a given path

expression". Finally, section 5.3 describes caching transformed documents containing

access control information. <u>Damiani</u> thus anticipates a cache containing access control

information related to a path.

The Appellant argues (A)(ii) "Damiani does not disclose, teach, or suggest 'checking the cache entry for the path associated with the node'". The Examiner respectfully disagrees.

Specifically, Appellant argues that Damiani does not teach paths, therefore the reference cannot anticipate this limitation either. This argument has already been addressed. Appellant also argues that the second cited passage of Damiani ("Performance and caching", lines 11-17) does not teach "checking the cache". The Examiner asserts that "checking the cache" is equivalent to the searching described in the cited passage. Caching is a very well-known technique at all levels of computing and the step of "checking the cache" is a necessary step in using a cache.

The Appellant argues (A)(iii) "Damiani does not disclose, teach, or suggest 'granting or denying access to the node based on the access control statement in the cache entry for the path associated with the node'". The Examiner respectfully disagrees.

Again, Appellant's argument comes down to whether or not Damiani teaches caching path information. See Examiner's comments above.

The Appellant argues (B)(i) "Damiani does not disclose, teach, or suggest 'evaluating a value expression for the path associated with the node to produce a result in response to the access control statement being an unknown statement or a data-dependent statement, wherein the value expression is an executable statement based

on an access control policy affecting the path and indicates who has access to the

node'". The Examiner respectfully disagrees.

The claim language reciting "an executable statement" is not granted much

weight because all statements on a computer are executable. Less broadly, the relevant

claim limitation is directed towards user authorization. <u>Damiani</u> discloses several

granularities of authentication (see section 3.2, "Identifying authorization subjects"):

"user identity" and "user-id".

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the

Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.
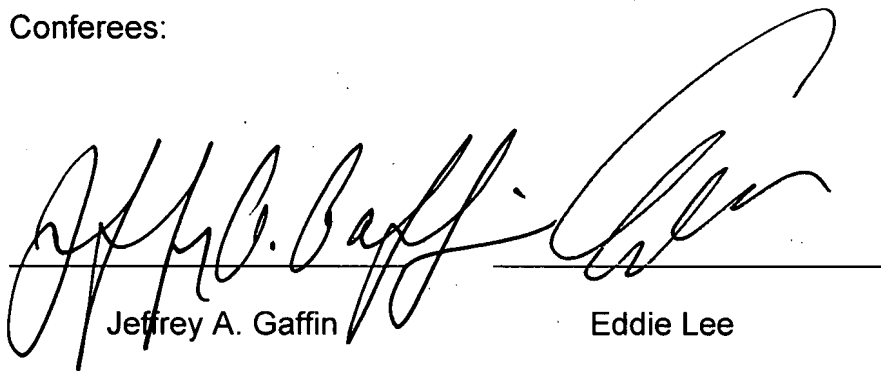
Respectfully submitted,

/Mark Radtke/

Mark A. X Radtke

Appeal Conference held on Monday, 16 July 2007, at 9 AM EST. Agreement was

reached to proceed to the Board of Appeals and Interferences.

Conferees:

Jeffrey A. Gaffin   Eddie Lee

JEFFREY GAFFIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

EDDIE C. LEE
SUPERVISORY PATENT EXAMINER